3. To pass in the B Group only, a candidate should obtain not less than 40 per cent in any one subject of the group and not less than 40 per cent of the total maximum for all the subjects of Group B.

4. The fee for the Examination *in each compartment* will be Rs. 3 for teachers and school candidates and Rs. 4 for private candidates.

2. The Inspector-General of Education has submitted for approval a copy of the rules of the Upper Secondary Examination with necessary additions and modifications embodying the proposals above referred to. The rules as revised are approved and appended to this order.

K. MATTHAN,
*Chief Secretary to Government.*

## REVISED REGULATIONS OF THE MYSORE UPPER SECONDARY EXAMINATION.

I. The Mysore Upper Secondary Examination will be held annually on the first working day in April and the following days at the headquarters of each district.

2. The examination will be open to the following classes of candidates, provided they have passed the Mysore Lower Secondary Examination.—

(*a*) Teachers employed in Government, Aided, Municipal and other recognised schools.

(*b*) Pupils of Upper Secondary Classes of Government or recognised schools.

(*c*) All other persons who will be regarded as private candidates.

*N.B.*—The President of the Board for the Management of the Mysore Local Examinations may, however, exempt deserving candidates from the condition requiring them to have passed the Mysore Lower Secondary Examination, if they have been teachers in Government, Municipal, Aided or other recognised schools for a period of not less than three years.

III. Under-graduates of the Madras University will be allowed to appear for the Mysore Vernacular Upper Secondary Examination in the language and Science subjects.

IV. Applications for admission to the examination shall be sent so as to reach the Secretary, Local Examinations Boards, Bangalore, not later than the 15th December, on printed forms which may be obtained from the Local Examinations Office at Bangalore.

V. No candidate shall be registered for the full examination unless he has previously paid a fee of Rs. 5, if he be a teacher or pupil candidate, and Rs. 7, if he be a private candidate. The fees for either the A Group or the B Group will be Rs. 3, in the case of teachers and school candidates and Rs. 4 in the case of private candidates.

VI. Candidates shall be examined in the following subjects :—

1. *First Language.*—*Kannada.*—There shall be three papers, one of three hours' duration on the prescribed text-books including explanation of selected passages and questions on Grammar, idiom, and analysis, etc., one paper of 2½ hours' duration on Advanced Grammar, Poetics and Prosody as treated in Shabdamanidarpana, Panit Srinivasa Raghavacharya's Chandomalike and Essays of Kannada Upanyasamanjari of R. Raghunatha Rao; and one paper of 2 hours' duration on composition.

or

*Urdu.*—There shall be three papers; one paper of 3 hours' duration on the prescribed text-books including explanation of selected passages and questions on Grammar and analysis, etc., one paper of 2½ hours' duration on Advanced Grammar, Poetics and Prosody as treated in (1) Misbah-ul-qaid revised by Anjumani-Targqui-urdu and (2) Tazkera-tul-balagat, two parts of Bayan and Badi and one paper of 2 hours' duration on composition.

or

*Sanskrit.*—Nataka Standard. Three papers of 3, 2½ and 2 hours' duration respectively.

First paper.—Text books. One Nataka and 3 Sargas of Kvaya.

Second paper.—Grammar and Poetics.

Third paper.—Translation.

*N.B.*—In composition, both in Kannada and Urdu, candidates shall be required to write short essays on (1) a general subject, and (2) a subject or subjects chosen from text-books for non-detailed study.

2. *Second Language.*—(*a*) *Sanskrit.*—There shall be two papers, one of 3 hours' duration on the prescribed text-books and elements of Practical Grammar and one paper of 2 hours' duration consisting of unseen passages for translation from Sanskrit into Kannada, and Kannada into Sanskrit.

or

(*b*) *Persian.*—There shall be one paper of 3 hours' duration on the prescribed text-books and Grammar, idiom, analysis, etc., as treated in the parts on Etymology and Syntax in Ahsan-ul-quaid and one paper of 2 hours' duration consisting of unseen passages for translation from Urdu into Persian, and Persian into Urdu.

or

(*c*) *Arabic.*—There shall be one paper of 3 hours' duration on Dirayath-ul-adith and grammar, structure and idiom of the language as treated in Mifta-ul-adab; and one paper

of 2 hours' duration consisting of unseen passages for translation from Arabic into Urdu, and from Urdu into Arabic.

(d) *English.*—There shall be two papers; one of 3 hours' duration on the prescribed text-books and grammar; and one paper of two hours' duration on composition and translation from English into Kannada or Urdu; and Kannada or Urdu into English.

(e) Kannada.—There shall be two papers; one of 3 hours' duration on the prescribed text-books and Grammar; and one paper of 2 hours' duration on composition.

*N.B.*—The examination in English will be of the Lower Secondary Standard only those who have read up to the *Third Year Middle School Course* before joining the Upper Secondary Class will be permitted to take English as a Second Language.

11. "Candidates who have passed the Lower Secondary Examination with English or Sanskrit or Persian as First Language, will be exempted from the Examination in the same subject taken as Second Language for the Upper Secondary Examination. But they will, however, have to undergo the class tuition in that subject. Exemptions under this rule should be applied for before 1st November preceding the examination.

3. *Elementary Mathematics.*—There shall be two papers, one of 3 hours' duration on Arithmetic and Algebra; and another of 2½ hours' duration on Geometry.—Experimental and Theoretical.

4. *Elementary Science.*—There shall be two papers, one of 1½ hours' duration on Physics and another of 1½ hours' duration on Chemistry. (Practical work to form part of the course.)

5. *History and Geography.*—There shall be two papers one of 3 hours' duration on Indian and English Histories; and another of 3 hours duration on Geography. (English History, Tudor Period to end. General survey.)

VII. The subjects of the examination will be divided into two groups A and B, the A Group comprising—

1. First Language—Kannada, Urdu or Sanskrit.
2. Second Language—Kannada, Sanskrit, English, Persian or Arabic.
3. History and Geography.

and the B Group comprising—

1. Arithmetic and Algebra.
2. Geometry.
3. Physics and Chemistry.

VIII. Candidates should appear for both the groups till they have passed in either of them, after which they can appear for the remaining group. No condidate will be permitted to appear for one compartment, unless he has already passed in the other.

IX. The examination shall be conducted in the order of time and subjects set forth in the following table.

| | Day | Time | Subjects |
|---|---|---|---|
| A Group. | | | *First Language.* |
| | First day | 10 A.M. to 1 P.M. | 1. Kannada or Urdu or Sanskrit Text Books. |
| | | 2 P.M. to 4-30 P.M. | 2. Advanced Grammar and Prosody. |
| | Second day | 10 A.M. to 12-30 P.M. | 3. Composition in Kannada or or Urdu or Translation in Sanskrit. |
| | | 1 P.M. to 4 P.M. | Geography |
| | Third day | 10 A.M. to 1 P.M. | History |
| | | | *Second Language.* |
| | | 2 P.M. to 5 P.M. | 1. Text and Grammar. |
| | Fourth day | 10 A.M. to 12 P.M. | 2. Translation or Composition or both. |
| B Group. | | 1 P.M. to 4 P.M. | Arithmetic and Algebra. |
| | Fifth day | 10 A.M. to 12-30 P.M. | Geometry. |
| | | 1-30 to 3 P.M. | Physics. |
| | | 3-30 to 5 P.M. | Chemistry. |

X. Candidates for the full examination shall not be allowed to pass unless they obtain not less than (1) 40 per cent of the marks assigned to the First Language and (2) 35 per cent of the marks assigned to each of the other subjects.

But a candidate for the full examination that passes in the First Language and obtains 50 per cent of the total number of marks will be considered to have passed, even if he has failed in any one of the remaining subjects.

Such of the successful candidates as obtain not less than 60 per cent of the aggregate number of marks shall be placed in the first class and all the others in the second class.

To pass in A Group only, a candidate should obtain not less than 40 per cent of the maximum marks for the First Language and not less that 40 per cent of the total maximum for all the subjects of that group. (In the case of those who are entitled to exemption from taking English, Sanskrit or Persian as a Second Language, on the ground of their having passed the Lower Secondary with *any* of these three as First Language, the Group A will be one of *only two subjects*—(1) First Language and (2) History and Geography).

To pass in the B Group only, a candidate should obtain not less than 40 per cent in any one subject of the group and not less than 40 per cent of the total maximum for all the subjects of Group B.

XI. A certificate, signed by the President of the Local Examinations Boards, shall be given to each successful candidate who passes the full examination setting forth the date of the examination, the First and Second Languages and the other subjects in which the candidate was examined and the class in which he was placed.

## SYLLABUSES.

### I. SANSKRIT—Second Language.

Elements of Practical Grammar to be taught with special reference to prescribed reading books and through translation exercises. Simple Sandhi Rules, Declension of familiar Subantas including Nouns, Adjectives, Numerals and Pronouns, Conjunction in the special tenses of the roots belonging to first, fourth, sixth and tenth classes. Participles Gerunds, Infinitives, Easy Samasas.

### II. ARITHMETIC.

The first four rules. Contracted methods of Multiplication and Division, Factors, H. C. F. and L. C. M. Relation between H. C. F. and L. C. M.

Fractions :—

(*a*) Vulgar.

(*b*) Decimal :—Non-recurring and recurring, conversion into vulgar fractions and *vice versa*.

Addition, Subtraction, Multiplication, and Division. Problems involving fractions.

The Metric system.

Approximations to a specified degree.

Simple and Compound Practice.

Simple and Compound Proportion.

Square Measure. Area of Rectangles, Squares and Circles. Cubic Measure.

Volumes of Simple solids like the Cube, Parallelopiped, Cylinder, Cone and Prism.

Square Root and Cubic Root of Integers and Fractions.

Percentages. Profit and Loss. Simple and Compound Interest.

(In Compound Interest examples to be very simple.)

Present Worth and Discount. Bankers and True Discount.

Stock and Shares, Simple Problems on Time and Work. Time and Distance.

Average and Exchange. Graphical Arithmetic :—

Straight Line Graphs, Solution of Problems by such Graphs. Statistical Graphs.

### III. ALGEBRA.

Symbolical Expression of general results in Arithmetic. Algebraical laws and principles and their applications. Simple factorisation. Equations of the first degree in one, two and three variables and the principles involved in their solution. Solution of problems by means of such Equations.

### IV. GEOMETRY.

*Introductory*—

Elementary notions of solids, surfaces, lines, points as illustrated from a cube, a pyramid, a prism, a cone and a cylinder.

*Experimental*—

*Straight lines.*—Drawing or measuring to given lengths. Division into two or more parts (1) by estimation, (2) with the straight edge and (3) by construction. Describing triangles, squares and other quadrilaterals with given data. Drawing straight lines to scale. Drawing perpendiculars on straight line from points on or without them. Drawing a straight line parallel to a given straight line (1) with set squares and (2) by construction.

*Circles.*—Describing circles of given radii intersecting circles, circles touching one another. Inserting chords of given lengths in a circle. Drawing tangents to a circle, Direct or transverse tangents to two circles. Inscribing or circumscribing regular polygons in or about a circle.

*Angles.*—Use of the protractor; construction of special angles with ruler and compasses only. Constructing an angle equal to a given angle.
Bisecting an angle.

*Theoretical—*

1. (*a*) If a straight line stand on another straight line, the sum of angles equals two right angles, and the converse.
   (*b*) If two straight lines cut, (i) the vertically opposite angles are equal and (ii) the sum of the angles formed equals four right angles.
2. Proofs of the three important and general conditions required to get that two straight lines are parallel to one another. Converse asserted by the parallel axiom.
3. Straight lines parallel to same straight line are parallel to one another.
4. If straight lines are drawn from a point parallel to the arms of an angle, the angle between those straight lines is equal or supplementary to the given angle.
5. Sum of three angles of a triangle equals two right angles. Sum of exterior angles formed by producing the sides of a Polygon in the same order equals four right angles. Sum of interior angles of a Polygon plus four right angles equals twice as many right angles as the figure has sides.
6. Proofs of the conditions of the congruence of two triangles.
7. Base angles of an isosceles triangle are equal and the converse.
8. The greater side in a triangle has the greater angle opposite to it and the converse.
9. Congruence of two right angled triangles.
10. Sum of two sides of a triangle is greater than the third side.
11. Inequality of two triangles having two sides equal but not included angles or third side.
12. The perpendicular is the shortest distance between a point and a straight line.
13. Parallelograms have (i) opposite sides equal, (ii) opposite angles equal, (iii) diagonals bisecting one another, (iv) diagonals bisecting the parallelogram.
14. Conditions for a quadrilateral to be a parallelogram.
15. If distances between three or more parallel straight lines be equal, then the intercepts of transversal are equal.
16. Locus. Loci of points equidistant from (i) two given points (ii) two intersecting straight lines.
17. Areas of parallelograms on the same base and between the same parallels are equal and *vice versa*.
18. Relationship between areas of prallelogram and triangle on the same base and between the same parallels.
19. Triangles on same base and between same parallels are equal.
20. The Theorem of Pythagoras and its converse.
21. Geometrical illustrations of the following identities:—
    (1) $p(a-b-c) = pa-pb-pc$...
    (2) $(a+b)^2 = a^2+2ab+b^2$
    (3) $(a-b)^2 = a^2-2ab+b^2$.
    (4) $a^2-b^2 = (a+b)(a-b)$
    (5) $(a+b)^2+(a-b)^2 = 2(a^2+b^2)$.
    (6) $(a+b)^2-(a-b)^2 = 4ab$.
22. The square on the side opposite an obtuse angle in an obtuse-angled triangle is greater than the sum of the squares on the sides containing the angle by twice the rectangle contained by one of those sides and the projection of the other side upon it.
23. The square on the side opposite an acute angle in an acute-angled triangle is less than the sum of the squares on the sides containing the angle by twice the rectangle contained by one of those sides and the projection of the other side upon it.
24. Appollonius Theorem.
25. The straight line bisecting a chord and passing through the centre is at right angles to the chord, and the converse.
26. One and only one circle can pass through three points.
27. In equal circles, equal arcs subtend equal angles at centre, and converse.
28. In equal circles, equal chords cut off equal arcs, and the converse.
29. In a circle equal chords are equidistant from centre, and the converse.
30. If two circles touch, the centres and points of contact are in the same straight line.
31. Angle at centre is double the angle at circumference.
32. Angles in the same segment are equal.
33. Angle in a semi-circle is a right angle. Angle in a segment greater than a semi-circle is an acute angle and angle is a segment smaller than a semi-circle is obtuse.

V. PHYSICS.

Measurement of length, angle, area and volume.
Measurement of time.
Velocity and acceleration.
Matter and force, measurement of mass and density.
Forces in equilibrium, gravity, momentum.
Newton's Laws of Motion.
Principle of work.
Simple machines in equilibrium.
Fluid pressure.
Floating bodies. Principle of Archimedes.
Density: Methods of determining relative densities.
Relation between volume and pressure of gases.
The pressure exerted by the atmosphere.
The principle of the mercurial-barometer.
Some instruments depending upon fluid pressure, the Air pump, the Common pump and Siphon.

HEAT.

Examples of expansion by heat.—(1) Expansion of solids, (2) Expansion of liquids, (3) Expansion of gases. Change of size. Measurement of change of temperature. Thermometers, construction and use of mercury thermometers. Change of state, melting point, boiling point, vapour.
Effect of pressure on the boiling point.
Water does not always expand when heated.
Changes in volume and density as water is cooled.
Results in nature of the peculiar expansion of water.
Quantity of heat and its measurement.
Specific heat, Latent heat.
Calorimetry.
Transference of heat, conduction, convection and radiation.
Heat considered as a form of energy.

SOUND.

Production and propagation of sound.
Nature of wave motion.
Amplitude, pitch, and wave length.
Experimental determination of the velocity of sound in air.
Reflection and refraction of sound.

LIGHT.

Propagation of light. Light travels in straight lines. Laws of reflection of light. Formation of an image by a plane mirror. Reflection from spherical mirrors.
Refraction of light. Refraction at plane surface.
Rules of refraction. Various effects of refraction.
Refraction through a prism.
Refraction through a lens. The principal focus of a lens.
Convex lens.
The photographic camera in its simplest form, the simple microscope, the telescope.
The eye.
Analyses of light, dispersion by a prism.
Decomposition of white light.
Colour. Coloured bodies, and transparent bodies, and opaque bodies.

MAGNETISM.

Lodestone. Its properties.
Magnets. Their properties. Magnetic induction.
Lines of Force.
Terrestrial magnetism. The mariner's compass and the dipping needle.

ELECTRICITY.

Development of electrification by friction.
Electrical attraction and repulsion.
Two kinds of electrification.
During electrification, two kinds of equal and opposite charges are produced.
The gold-leaf electroscope.
Conductors and insulators.
Electric induction. The Electrophorus.
Simple electric machines. The leyden jar.
The electric current.
The simple cell. Local action and polarisation.

Types of Voltaic cell, Daniel's cell, Bunsen's cell, Grove's cell.
Magnetic action of electric currents. Electromagnets.
Galvanometer.
Electro-motive force.
Electric resistance.
The ampere, the volt and the ohm.
Ohm's Law.
Simple methods of comparing current strength and resistance of conductors.
Heating and chemical effects of currents.
Application of electricity in common use.
Electric lamps, bells, telegraph and telephone.

VI. CHEMISTRY.

Methods of separating constituents of mixtures (illustrated by sand and sugar; sulphur and iron filings; salt and water). Difference between mixtures and compounds. Decomposition of compounds into simpler substances (illustrated by action of heat on red oxide of mercury and lead nitrate) and of sodium on water). Elements. Occurrence in nature of mixtures, compounds and elements; nature of some common materials such as wood, sugar, water, air and iron. Chemical combination (illustrated by sulphur burning in air, magnesium burning in air, sulphur combining with iron; quicklime combining with water). Characteristics of chemical change. Detailed investigation of some common changes; (i) rusting of iron, (ii) burning of a candle. Oxidation. Products formed during oxidation always heavier than original substance. Properties of air before and after rusting of iron or burning of a candle or phosphorus in it. Active constituent removed by phosphorus, etc., one fifth of total volume. Residue inactive. Composition of air. Active constituent can be removed by heated mercury, with formation of a red powder; action of heat on this powder and discovery of oxygen. Other ways of preparing oxygen. Properties of oxygen. Nature of products formed by burning sulphur, phosphorus, carbon, candle, sodium and iron in oxygen. Behaviour of these products towards water; acid and alkaline properties. Investigation of action of sodium on water. Liquid product the same as that obtained by burning sodium in oxygen and dissolving in water. Properties of new gaseous products. Hydrogen. Other methods of preparing hydrogen. Action of metals on acids. Relation between weight of metal and of hydrogen produced. Equivalents. Laws of constant proportions and of combining proportion. Combination of hydrogen and oxygen. Composition of water. Ways of ascertaining composition of compounds; analysis and synthesis illustrated in the case of water. Properties of water. Temporary and permanent hardness. Properties of solutions. Acids and bases. Quantitative interaction of acids and bases. Salts. Carbon; its occurrence, properties and importance in natural processes. Product of combustion, carbon dioxide. This gas is formed during combustion of all carbon-containing substances, and is exhaled by all living organisms. Action of green plants and sun light on carbon dioxide. Properties of solution of carbon dioxide. Properties of carbon monoxide. Physiological action of carbon dioxide and carbon monoxide. Silicon. Chief compound, silica; its occurrence in nature free and as silicates. Nitrogen, the principle inactive constituent of air. Preparation and properties. Compounds with oxygen. Law of multiple proportions. Nitric acid, preparation from saltpetre and sulphuric acid. Properties. Ammonia, preparation and properties. Solubility in water and properties of the solution. Power of neutralising acids and forming salts. Behaviour of these salts on heating. Phosphorus, properties of different modifications. Allotropy. Sulphur, occurrence and modifications. Compounds with oxygen, sulphurous and sulphuric acids. Action of sulphuric acid on common salt. Hydrochloric acid. Properties of the gas and of its solution in water. Action of manganese dioxide on the latter. Chlorine. Chemical activity of chlorine. Bleaching action. Bromine and Iodine. Their compounds with hydrogen general character of the non-metals and their difference from metals.

An elementary experimental study of the more important metals, *viz*, Iron, copper, lead, aluminium, mercury, calcium, sodium and potassium.

VII. HISTORY AND GEOGRAPHY.

(a) *Geography*.—(i) Geikie's Primer of Physical Geography. (2) General Geography and the Geography of India in particular. (3) Map-drawing—Map of some country or portion of a continent on prepared projections, without outlines.

A new Geography of the Indian Empire by Morrison, and Longman's Geographical Series, Book III, are recommended for the teacher's use.

(b) *History*.—(i) Outlines of the History of India up to 1876 A. D. with Chapters I, II, III (paragraphs 18 and 19 only), V, VI, VII, VIII, XIII, and XVI, in "The Citizen of India" by Sir William Lee-Warner (Revised Edition, 1906).

(ii) *English History*.—Tudor Period to end. (A general survey of the portion prescribed.)

### Admission and Re-admission Fees.

READ—

Government Order No. 12121-2—Edn. 47-19-18, dated the 26th June 1920, prescribing the rates of admission and re-admission fees in Lower Secondary Schools, and the procedure for levying the same.

2. Government Order No. E. 5040-9—Edn. 121-21-87, dated the 17th February 1923, directing among other matters that Primary and Middle Schools be remodelled so as to constitute each of them into a separate four year course.

3. Letter No. Gl. C. 4056—23-24, dated the 9th June 1924, from the Inspector-General of Education suggesting revised scales of admission and re-admission fees, in Middle and Incomplete Middle Schools.

ORDER NO. E. 796-8— EDN. 320-23-2, DATED 26TH AUGUST 1924.

The Inspector-General of Education reports, that the remodelling of Primary and Middle Schools each on a four years' basis in accordance with the Government Order dated 17th February 1923, has necessitated a revision of the rates and procedure regarding the imposition of admission and re-admission fees prescribed in Government Order dated 26th June 1920, read above. He has accordingly submitted the following proposals in the matter:—

(1) That no admission or re-admission fees need be levied in Primary Schools.

(2) That in Primary and Incomplete Middle Schools under the same Head Master, all pupils passing from the Primary to the Middle School stage of education, should be required to pay an admission fee.

(3) That pupils in Middle or Incomplete Middle Schools, should pay an admission fee when they change schools.

(4) That the scale of admission and re-admission fees in Middle and Incomplete Middle Schools, may be fixed as follows:—

| | *Admission fee.* | *Re-admission fee.* |
|---|---|---|
| | Rs. a. p. | Rs. a. p. |
| I. Year Middle or Incomplete Middle School class | 0 8 0 | 1 0 0 |
| II. Year do | 0 12 0 | 1 8 0 |
| III. Year Middle School class | 0 0 0 | 0 0 0 |
| IV. Year do | 0 0 0 | 0 0 0 |

2. Government agree with the Inspector-General of Education that no admission fee need be charged in Primary Schools in areas in which the Compulsory Education Scheme is in force, as the Compulsory Education Regulation makes ample provision for securing regularity of attendance of pupils etc., but they consider that a re-admission fee of annas eight should be charged in Primary Schools in non-compulsory areas. As regards the Primary and Incomplete Middle Schools under the administrative control of the same Head Master, Government observe that the levy of an admission fee from pupils passing from the Primary to the Middle School stage will be felt as a hardship, as the change will be regarded only as a promotion from one class to another and therefore direct that no fee need be charged in such cases. With these modifications the proposals of the Inspector-General of Education are approved. The scale of fees as revised will have effect from the 1st July 1924.

MATTHAI,
*Chief Secretary to Government.*

## FINANCIAL SECRETARIAT.

### Medical Examination of female proposers for Insurance by Lady Medical Graduates.

Read—

Letter No. 1438, dated 31st July 1924, from the Secretary, Insurance Committee, forwarding for sanction an amendment to Rule 10 of the Public Branch Rules with the approval of the Insurance Committee.

ORDER NO. FL. 1297-8—G. F. 36-24-5, DATED 29TH AUGUST 1924.

Sanctioned. The amended Rule 10 will stand as under:—

"All officers of Government who are medical graduates of a University, and who are of not less than five years standing in the Medical Department, are competent to examine proposers for Life Insurance in the Public Branch. Female proposers should undergo medical examination by lady medical graduates."

M. N. KRISHNA RAO.
*Financial Secretary to Government.*